

REMARKS

Claims 1-31 remain in the case under prosecution.

The Amendment of Claims 1, 15, and 25

Applicants have amended independent claims 1, 15, and 25 to more clearly define the invention. The amended claims now clearly specify that the C₅ plus syncrude feedstock recovered from a Fischer-Tropsch plant comprises a mixture of hydrocarbons boiling in the range of naphtha, diesel, and lubricating base oils. The amended claims further stipulate that the entire C₅ plus syncrude feedstock is bulk dewaxed in the dewaxing zone. In addition, a typographical error is corrected in claim 15 where the temperature 120 degrees C is changed to 150 degrees C.

These amendments are proper and fully supported by the specification. Support for the amendments to each of the independent claims may be found generally throughout the application, but the Patent Office is specifically directed to page 2, lines 13-25; page 2, line 29 to page 3, line 3; page 7, lines 9-13; and to the Example found on pages 14 and 15. Support for the amendment of the temperature in Claim 15 may be found on page 5, line 3. Accordingly, Applicants respectfully request that the amendments to claims 1, 15, and 25 be entered.

The Rejection of Claims 1-3, 10, 11, 13-15, 22, and 23

Under 35 USC 103(a)

Claims 1-3, 10, 11, 13-15, 22, and 23 stand rejected as obvious under 35 USC 103(a) over EP 0323092 A2 (referred to hereafter as Boucher et al.). It is respectfully submitted that with the amendment of Claims 1,

15, and 25, the present invention may be patentably distinguished from this reference.

As clarified by the amendment to the independent claims, Applicants' invention resides in the bulk dewaxing of the entire C₅ syncrude recovered from Fischer-Tropsch unit, i.e., all of the Fischer-Tropsch products recovered from the Fischer-Tropsch operation which boil within the range of naphtha, diesel, and wax. Prior art processes, including Boucher et al. separate the high molecular weight Fischer-Tropsch wax from the liquid hydrocarbons comprising the naphtha and diesel fractions prior to dewaxing. Accordingly, it is necessary to perform two separation steps when using conventional process schemes which require the dewaxing of Fischer-Tropsch wax. The first separation which separates the wax (normally solid at ambient temperature) from the naphtha and diesel fraction (normally liquid at ambient temperature) takes place after the syncrude is collected from the Fischer-Tropsch operation and prior to the dewaxing step. The second separation takes place after the dewaxing step to recover the additional naphtha and diesel produced as a result of the wax cracking of the Fischer-Tropsch wax molecules. In Boucher et al. the initial separation is not discussed, but it clearly takes place. It should be noted that only the wax fraction in Boucher et al. is sent to the dewaxing operation after it has been hydrotreated to remove certain impurities, mostly oxygenates. See, for example, the description of the drawing in Boucher et al. which begins on page 4 at line 8 to about line 12. Note especially lines 10 and 11 where it is stated that "It is all high melting wax..." indicating that there is little, if any, diesel or naphtha present. Again, in the example, on page 7, Boucher et al. states that the feed consists of a 700 degree F plus fraction which indicates that only high boiling wax is present in the feed to the hydroisomerization unit.

In contrast to Boucher et al., Applicants' invention sends the entire C₅ plus Fischer-Tropsch product to the dewaxer. This has several advantages over

process schemes as taught in Boucher et al. and other prior art references. In Applicants' invention only a single separation step is required to collect the final product fractions which results not only in a simplified process scheme but also in a significant savings in capital investment. Applicants' invention also produces a very high quality diesel product. As noted on page 6 of the specification at lines 27 to 32, diesel produced using Applicants' process is characterized by an especially low pour point and cloud point. The improved properties of the diesel allow the end point of the diesel fraction to be extended which may be used to increase in the yield of diesel, if so desired. These advantages could not have been predicted from a study of the prior art.

The Rejection of Claims 4-9, 12, 16-21, and 24-31

Under 35 USC 103(a)

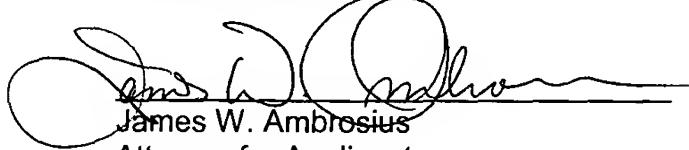
Claims 4-9, 12, 16-21, and 24-31 stand rejected as obvious under 35 USC 103(a) over Boucher et al. in view of US Patent 5,135,638 (referred to hereafter as Miller). The differences between Boucher et al. and the claimed invention have already been discussed. Miller fails to overcome these deficiencies. Miller teaches the hydroisomerization of waxes to produce ultra-high VI lubricating base oil. Miller also describes the use of SAPO-11 and certain intermediate pore zeolites in his process. Although Miller mentions Fischer-Tropsch wax as a possible feed for producing lubricating base oils, this reference is primarily concerned with feeds produced from conventional petroleum waxy feedstocks, such as slack wax. Miller never discusses the hydroisomerization of diesel or naphtha nor the hydroisomerization of the entire C₅ plus syncrude recovered from a Fischer-Tropsch reactor. Therefore, Miller does not teach the advantages of bulk dewaxing the entire C₅ plus syncrude product, and consequently, Miller fails to overcome the limitations of Boucher et al. already discussed above.

Summary

Applicants have argued that the essence of their invention resides in the bulk dewaxing of the entire C₅ plus syncrude product recovered from the Fischer-Tropsch unit. Accordingly, unlike the process schemes described in the prior art which dewax only the Fischer-Tropsch wax fraction, in the process claimed by Applicants the entire syncrude product recovered from the Fischer-Tropsch reactor comprising a mixture of naphtha, diesel, and wax fractions is sent to the dewaxer. It was noted that Applicants' invention has several advantages over the prior art processes as exemplified by Boucher et al. Applicants process scheme only requires a single separation step which results in greater operating efficiency and significant savings in the initial capital investment. Applicants' claimed process also produces an especially high quality diesel product and may be used to increase the yield of diesel in the final product slate. It has been noted that none of the references of record suggest the bulk dewaxing of the entire Fischer-Tropsch syncrude product nor do they suggest the advantages of operating in this mode.

It is submitted that the claims as amended are patentable over all of the art of record. Accordingly, it is submitted that the rejection of amended claims 1-31 is no longer tenable, and it is requested that the rejection based upon 35 USC 103(a) be withdrawn. Allowance of all claims in the case and passing of this application to issue in due course is earnestly solicited.

Respectfully submitted,



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